

1. (Currently Amended) A non-recursive filter for receiving samples and generating a filtered signal, said filter comprising:

[at least one] a first input for receiving [said] even samples;

a second input for receiving odd samples;

two sets of summation units, wherein a first set of summation units has an even output and a second set of said summation units has an odd output, and wherein each set of summation units includes a plurality of summation units, each of said summation units comprising:

two multipliers directly connected to said input, said multipliers multiplying said samples and providing multiplied samples; and

an adder connected to said multipliers, said adder adding said multiplied samples and providing added samples; and

a plurality of delay elements positioned between said summation units, said delay elements receiving said added samples and providing a delayed output of said added samples to a successive summation unit of said summation units.

2. (Previously Amended) The non-recursive filter in claim 1, wherein each of said delay elements is connected to an adder of said successive summation unit.

3. (Original) The non-recursive filter in claim 1, further comprising an initial delay element connected to an initial multiplier, said initial delay unit supplying an initial delayed sample to an adder of an initial summation unit.

4. (Previously Amended) The non-recursive filter in claim 1, wherein said multipliers receive said samples in an undelayed state.

5. (Previously Cancelled).

6. (Previously Amended) The non-recursive filter in claim 1, wherein said non-recursive filter comprises an interleaved non-recursive filter receiving odd and even

samples and said adder receives an odd multiplied sample from one of said two multipliers and an even multiplied sample from a second of said two multipliers.

7. (Original) The non-recursive filter in claim 1, wherein said delay elements control said samples such that each of said adders receives at most two of said samples.

8. (Currently Amended) A non-recursive filter for receiving samples and generating a filtered signal, said filter comprising:

two sets of successive partial summation units, wherein a first set of successive partial summation units has an even output and a second set of said successive partial summation units has an odd output, and wherein each set of successive partial summation units includes a plurality of successive partial summation units, each partial summation unit having two multipliers for multiplying an undelayed state of each of said samples, and an adder for adding multiplied samples; and

a plurality of delay elements each coupled to said adder for receiving added samples and for providing a delayed output of said added samples to a successive partial summation unit.

9. (Original) The non-recursive filter in claim 8, wherein each of said delay elements is connected to an adder of said successive partial summation unit.

10. (Original) The non-recursive filter in claim 8, further comprising an initial delay element connected to an initial multiplier, said initial delay unit supplying an initial delayed sample to an adder of an initial summation unit.

11. (Previously Amended) The non-recursive filter in claim 8, wherein said multipliers receive said samples in an undelayed state.

12. (Previously Cancelled).

13. (Previously Amended) The non-recursive filter in claim 8, wherein said non-recursive filter comprises an interleaved non-recursive filter receiving odd and even samples and said adder receives an odd multiplied sample from one of said two multipliers and an even multiplied sample from a second of said two multipliers.
14. (Original) The non-recursive filter in claim 8, wherein said delay elements control said samples such that each of said adders receives at most two of said samples.
15. (Currently Amended) An interleaved non-recursive filter for receiving samples and generating a filtered signal, said filter comprising:  
 [at least one] a first input for receiving [said] even samples;  
a second input for receiving odd samples;  
two sets of summation units, wherein a first set of summation units has an even output and a second set of said summation units has an odd output, and wherein each set of summation units includes:  
     a plurality of multipliers directly connected to said input, said multipliers multiplying said samples and providing multiplied samples;  
     a plurality of adders, each of said adders being connected to two of said multipliers, said adders adding said multiplied samples and providing added samples; and  
     a plurality of delay elements positioned between said adders, said delay elements receiving said added samples and providing a delayed output of said added samples to a successive adder of said adders.
16. (Original) The interleaved non-recursive filter in claim 15, further comprising an initial delay element connected to an initial multiplier, said initial delay unit supplying an initial delayed sample to an initial adder.
17. (Original) The interleaved non-recursive filter in claim 15, wherein said multipliers receive said samples in an undelayed state.
18. (Previously Cancelled).

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19. (Previously Amended) The interleaved non-recursive filter in claim 15, wherein said samples comprise odd and even samples and said adder receives an odd multiplied sample from one of said two multipliers and an even multiplied sample from a second of said two multipliers.

20. (Original) The interleaved non-recursive filter in claim 15, wherein said delay elements control said samples such that each of said adders receives at most two of said samples.